

DEPARTMENT OF COMMERCE
BUREAU OF FISHERIES
WASHINGTON

RETURN AFTER FIVE DAYS

Learning Notes - 1914

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE \$300

Memo. Re.

Fish Cannery By-Products Ltd. Wards Cove, Ketchikan Alaska.

Purpose. The utilization of waste fish for the manufacture of fish oils, fish meal, Lethis albumen, animal charcoal, fish glue, etc.

Construction. Active work commenced on the plant on April 10 th.
The factory commenced operations in all its departments on August 10 th.

Buildings. The main factory building is 150 ft. long by 30 ft. deep. Consists of five floors. mill construction.
Oil storage capacity consists of six 30000 gal tanks. which will be housed under a building 80x60 ft. 25 ft. high.
Meal storage in building to be erected in rear of factory on second floor size 50x60 ft.
Oil refinery on first floor of above building.

Out Buildings. Managers House. 7 Rooms. Value about \$2000.00
Office Building 5 Rooms " " 1500.00
Mess House 5 " " " 1000.00
Supts. " 5 " " " 1000.00
Asst " " 2 " " " 500.00
Bunk House 5 " (for 35 men) 1000.00
" " 3 " (" 20 ") 500.00

Machinery 2-100 H.P. Boilers. Main Engine 125 H.P. 3-25 H.P. Engines.
2-350 Ton Pressure Hydraulic Presses. 60 inch Platten.
3-Steam heated Vacuum digester Dryers.
Electric light equipment, Numerous pumps, conveyors, mills,
Oil cookers, fillers, Metal screens, automatic bagging and weighing machines,
Boilers are fired with gravity system crude oil system.

Wharf, etc. Main wharf is 150 ft front by 60 ft deep and extends along shore to Oil tanks a distance of 285 ft.
Board walk four foot wide extends from factory along shore line to managers house a distance of 2400 ft.

Boats, scows. Two offal boats 65x16 ft. 50 H.P. Capacity below deck 55 tons.
One " " 54x12 " 30 " " " " 20 "
Six scows (Pot) 45x12 " ----- " " " 30 "

Process. The material is discharged from the boats and scows by means of a moveable bucket elevator having a capacity for mechanically discharging 35 tons per hour and delivering same into a raw fish storage, which is divided into four compartments each having a capacity of 50 tons.

From this storage the material is elevated to the top of the factory and distributed into the cooker reserve tanks there being 14 in all. From these tanks the material is by gravity delivered to the cookers (14) where the fish is cooked by steam. From the cookers the mass after all the liquids have been drained is by gravity discharged to the press storage reserve tanks, and from there by gravity to the press cars. The presses are operated to about 7000 lbs. to the square inch, and reduce the cooked material to about 40% moisture. From the presses the material is by gravity delivered to the digestors and from there is passed

(C O P Y)

Re.Wards Cove By-products Factory.(2)

Through a metal screen and thence to a mill, and screened until the desired fineness is obtained. The meal is then cooled and by an automatic weighing and sacking machine made ready for shipment.

The liquids obtained from the cookers, press storage and presses is all separately treated in the oil refining process, the oil and water being first separated in independent separating tanks, is then washed in specially treated hot water, then the oil is boiled, then fullerized, filtered, bleached, deodorized, and finally pumped into the oil storage tanks from which it is placed in iron drums for shipment.

No fish is used for the manufacture of meal or oil that is over a certain percentage of acid (oelic) and material that is found to be unfit for meal production will next season be used for the manufacture of animal charcoal, the process to be used being obtained from Holland.

Next season all of the tankage will after being separated from the fatty liquids, be evaporated and processed for its glue and other values.

By a special screening device the roe will be separated from the offal and by a special process treated for its albumen and other values.

The oil is intended for hydrogenating purposes by the well known Norman process, which converts it into an edible fat.

Extension of Works. The company will during the coming winter erect a independent Dog fish and mud shark rendering department, also a mild cure, smoke house, pickleing and saltery works where, salmon, herring, and other fish will be used and the offal and waste from same used in the By-products department.

Operations. During the past salmon season the company collected the offal from eight canneries within a distance of fifty miles of Ketchikan and worked up about 1400 tons of salmon offal.

At each cannery special conveyors were constructed at the factory's expense and the material conveyed into storage tanks. The collection of the offal was done daily. The company have secured contracts for the purchase of the offal of the canneries for a short period on a payment basis of 1-1/4 cts. per case for all the salmon packed by the cannery during the salmon season, and agree to pay for same whether in fact removed or not.

Investment. The total investment to date exceeds \$100000.00 and the value of the improvements to be made will be about 65000.00

Capacity. The factory at present has a daily capacity for workinh up 120 tons of fish waste daily and when all improvements are completed will be able to treat an average of 200 tons in a double working day of 20 hours.

It is the intention of the company to if their present operations prove a success to eblarge their field of operations by constructing other units at different districts along the Alaskan coast.

DEPARTMENT OF COMMERCE
BUREAU OF FISHERIES

November 17, 1914.

MEMORANDUM REGARDING HERRING OPERATIONS.

P. B. Funcke,
Mr. ^AFunck, of the Alaska Oil & Guano Company called at the office to-day and stated that herring operations in southeast Alaska during the season of 1914 have been rather unsatisfactory on account of stormy weather. It is very difficult to locate schools of herring when the surface of the water is agitated. Operations were discontinued ^{last of September} a month earlier than usual, as it did not seem profitable under the circumstances to take a chance on ~~favorable~~ weather conditions ^{though} during the month of October.

It is noteworthy of mention that quite a number of halibut steamers obtained bait at Killisnoo this season. Another point is that nearly one-third of the product or about 200 tons of guano was sold for poultry food.

Alaska Daily Empire
Nov. 12, 1914
EMPIRE, THURSDAY, NOVEMBER

MAKING CHICKEN FEED AT KILLISNOO

The Killisnoo herring plant, owned by the Alaska Oil and Guano Co., no longer manufactures guano or fertilizer, according to Phillip G. Funcke, manager of the institution, but a market has been developed recently for a new by-product known as fish meal, which has come into great favor as chicken food. This fish meal is made from residue of the fish after the oil has been crushed out. It is said to carry a high percentage of proteins and lime which makes it an ideal chicken food especially if mixed with cereals.

Manager Funcke, who has been staying at the Occidental hotel for the past few days says that they have had a fairly good season. They took altogether 48,000 barrels of herring, securing from the catch 4,000 barrels of oil and 1,000 tons of fish meal. They also put up 300 barrels of herring for domestic use and sold 4,000 barrels to the halibut fishing fleet to be used as bait.

"The Killisnoo herring industry is one of the oldest established industries in the Territory having been engaged in business since 1882," said Mr. Funcke, "and it has operated continuously in the face of adverse conditions. For years there has been a bitter fight made on the business on account of the fact that guano or fertilizer constituted one of the by-products of the plant. The new by-product, fish meal, has solved the problem of making use of the residue after securing the oil, and guano is no longer a by-product of the institution. In order to remove the idea from the minds of the public that herring is reduced to fertilizer at the Killisnoo factory I shall endeavor to have the company change its title leaving out the objectionable feature which is misleading."

All of the herring used at Killisnoo, according to Mr. Funcke, are caught within a radius of 30 miles of the place. The season begins about June 1 and closes the last of September.

During the season that the Killisnoo factory operates Mr. Funcke says only a small per centage of the herring taken are suitable for food purposes on account of the diet on which they feed at that season of the year, a small red insect that is found in abundance in the feeding grounds. The best herring for food are taken now or during the winter and early spring months he thinks.

Mr. Funcke will take passage for the South on the City of Seattle tonight and attend a meeting of the company officials in Portland soon after reaching the States.

Herring
GMS Halibut

January 9, 1915.

Mr. Henry Wilkie,
Manager, New England Fish Company,
Ketchikan, Alaska.

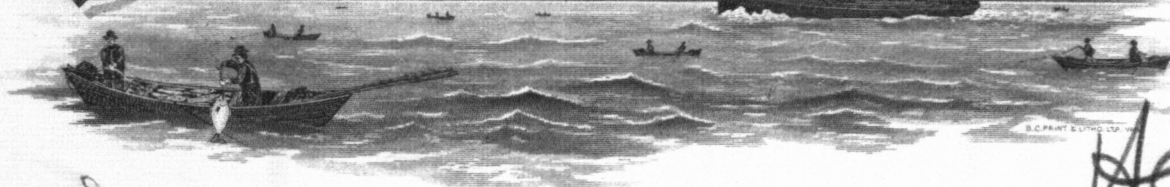
My dear Mr. Wilkie:

Your two letters of December 26, 1914, have been forwarded to me here at Washington, where I happen to be for a few weeks. I am very grateful, indeed, for the information which you have conveyed regarding the run of herring in Tongass Narrows. This will be very useful to me in preparing the next report on the fisheries of Alaska. Due note is made that your annual statistical reports for the season of 1914 have been forwarded through the Vancouver office. I assume that they will reach my hands in the near future.

Yours very truly,

Fisheries Agent.

NEW ENGLAND FISH CO.



ALASKA
JAN 5 - 1915
FISHERIES

KETCHIKAN,
ALASKA. Dec. 26, 1914

Herring

Halibut

Ward T. Bower, Agent in Charge,

Pacific Coast Bureau of Fisheries,

1226 L. C. Smith Bldg.,

Seattle, Wn.

Dear Sir:

All fall the herring have been so scarce in Alaskan waters that the Companies operating halibut vessels had to import herring for bait from British Columbia in order to enable them to operate their vessels. The herring imported for bait were frozen mostly all of last year as the scarcity of herring extended into British Columbia as well. It is true that comparatively only a small quantity of herring were imported as all fishermen entertained the idea that herring would make their appearance in these waters sometime late in the fall or early in the winter. In view of the fact that the herring were so scarce in southeast Alaska it surprised everybody to learn that they finally "struck in" on December 12 and made their first appearance in Tongass Narrows. Since that date the herring fishermen have been quite busy and we have been freezing herring for bait to the full capacity of our plant. On several occasions the seiners have tied one end of their seine to our wharf and made a haul on the face of our dock. These herring, as you can readily surmise, are perfectly alive when they go into the freezer and being of just the right size should be an excellent bait for the halibut fishermen.

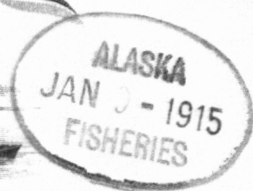
It is our first experience of seeing herring fit for halibut bait caught in Tongass Narrows and while dictating this letter the herring fishermen report that over 2,000 bbls. are corralled in four different seines operating at the present time this very minute. Thinking possibly that the Bureau has been besieged with letters this last fall reciting the fact that practically no herring frequented these waters any more, we, therefore, are writing you this letter believing that same may be of some interest to you.

Very truly yours,

NEW ENGLAND FISH CO.

BY *Henry Wilke*

HW/AH



KETCHIKAN,
ALASKA. Dec. 26, 1914

Ward T. Bower, Agent in Charge,
Pacific Coast Bureau of Fisheries,
1226 L. C. Smith Bldg.,
Seattle, Wash.

Dear Sir:

We are today sending our Vancouver office the yearly statistical report covering the operations of this plant for the year 1914. This plant is so closely linked to the one in Vancouver that it would be rather difficult for us to make out a separate report without getting some of the figures duplicated. We are therefore sending through our Vancouver office where the report will be completed in detail.

We are freezing quite a few halibut at the present time and large quantities of herring for bait. In order that we may be able to get as many figures into this year's report we therefore have delayed the completion of this report for a few days over and above the time specified by the law. The completed report will no doubt be mailed you from our Vancouver office within a few days.

Very truly yours,

NEW ENGLAND FISH CO.

By *Henry Wilke*
Resident Manager.

HW/AH

P. S. No mail boat south until Thursday Dec. 31st.

C O P Y

Re Herring

JL

FISH CANNERS BY-PRODUCTS LTD.

Office, 608 Pioneer Building,
Seattle, Washington.
February 24, 1915.

Dr. E. Lester Jones,
Deputy Commissioner of Fisheries,
Washington, D. C.

Dear Sir:

The writer promised you during his last visit to Washington to advise you as to what our company had decided to do regarding the coming season's operations and any other matters which might be of importance and of interest to you.

It has been decided and the work has already commenced, upon the enlargement of the factory at Wards Cove by the addition of a second unit so that during this season the factory will have a maximum capacity of approximately 220 lbs. ^{tons?} of offal per day of 24 hours.

This means an increased expenditure of approximately \$30,000. We hope that all the canneries contiguous to the factory will cooperate with us in regard to the sale to our company of the offal created through their operations. While the majority of the packers, we are pleased to say, are working with us, there are, however, two or three of the larger canneries which for some minor reasons have not agreed to allow us to purchase and collect their offal. The principal reason advanced by one of the packers is that the installation of conveyors and a receiving tank causes an obnoxious odor which of course does not agree with our views inasmuch as we are informed by the canners whose offal was collected by this means last year, that there was no odor nor uncleanness of any kind. However, we hope to collect the offal from the following points: Yes Bay, Loring, Kassin,

Chomley, Sunny Point, Quadra, Roe Point, Georges Inlet, Wards Cove, Fidalgo, Pure Food, New England and Ketchikan Cold Storage plants, the four latter being situated in the city of Ketchikan. Collection of all of the above material will approximate a total of about 12,000 tons. Four offal boats will be required and a total of 90 white men during the fishing season.

Re Herring. Your report apparently does not favor the use of herring in the manufacture of edible products and while we would be only too glad to cooperate with you in your present views, we think it only fair that you should be advised concerning the result of our last seasons efforts in our attempt to market Alaska herring as a salt fish product.

Last season we sent out three boats manned by a crew of eight men each and one foreman, or a total of 25 men in all. The boats operated from October 1st to December 23d, practically three months. During this period we caught and sold as halibut bait \$576.00 worth of herring.

We further caught and salted 380 barrels of fat, choice and, as compared with Norwegian herring, medium size herring. This salt fish was all hand picked, hand gibbed, brined, washed and re-salted in new barrels. Our actual cost on same, exclusive of fuel and supplies for the boats, insurance and food for the men was as follows:

Barrels	\$ 1.50	
Salt	.40	
Fish	1.75	
Freight	.75	
Storage	.10	\$4.50

Total cost of fuel and boat supplies during this season of herring operations was -----	1064.00
The total cost of food for the 25 men for 83 days was-----	1340.00
The total cost of barrels, salt, fish and freight-----	1743.00
Insurance on the boats-----	283.00
Or a total expense of-----	4430.00

which does not include any depreciation on fishing gear, which represents an outlay of \$6000, and which should be depreciated at the rate of at least 35% annually, to say nothing about

overhead expense, management, home office expenses, etc.

The other side of the ledger is as follows:

Herring sold as bait	576.00
Value of 380 barrels of salt herring at Seattle	1140.00
	<hr/>
	1716.00

or a loss to us of approximately \$2714.00

The fishermen worked on the share basis of payment and the 24 men, working on this basis received for their 83 days' work a little less than \$20.00 each.

We give you these details in an effort to explain what anyone who attempts to market Alaska herring has to contend with for as you doubtless know the finest Norwegian herring, packed in barrels containing about 220 lbs. in weight of fish, can be bought in Chicago for \$6.25, and the freight charge on a barrel of Alaska fish to Chicago amounts to \$2.40 and at no time will Alaska herring, regardless of its quality, bring in competition with Norwegian or Scotch herring, within one dollar of the latter's market value. Therefore, when we place a valuation of \$3.00 per barrel on our fish, we are anticipating a little more than its present market value.

On the other hand, by using herring such as is to be obtained in Southeastern Alaska for the manufacture of edible fish meal and edible oil used for hardening purposes, we produce from one ton of raw herring, products worth approximately \$12.75 and expend in labor, fuel for the boats and factory, barrels, sacks, freight, insurance and other factory expenses, approximately \$9.50 per ton. The herring meal is without doubt the finest product of its kind obtainable and herring oil such as we would manufacture is equal to soye bean, linseed, cotton seed or any similar vegetable oil in the manufacture of hardened edible fats

for human consumption.

In giving you the above information we do not want you to think that the writer has lost confidence in the possibilities with regard to utilizing Alaska herring for edible uses and we have seriously considered the possibilities of smoking herring on a large scale and canning what are known as kippers and bloaters, but it would be an almost impossible feat successfully to smoke herring and ship same to Seattle for distribution locally from Southeastern Alaska.

There is no doubt a time when small, independent fishermen can put up a few barrels of salt herring during the favored seasons of the year and market them locally, but this entire coast would hardly consume 1000 barrels of the very finest Alaska herring obtainable and with Norwegian and Scotch fish to be obtained in eastern markets at anything like the price now ruling, Alaska herring would be productive of only a loss to those engaged in it.

If at any time the writer can give you any information, you have but to make your wants known and this letter is written purely with a view of giving you some of the inside facts in regard to our business so as to, if possible, better acquaint you with actual conditions.

Yours very truly,

FISH CANNERS BY-PRODUCTS LTD.

(Signed) By J. H. Scott